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February 18, 2022

**VIA ELECTRONIC FILING**

The Honorable Jocelyn G. Boyd  
Chief Clerk/Executive Director  
Public Service Commission of South Carolina  
101 Executive Center Drive, Suite 100  
Columbia, SC 29210

**Re: Petition to Review Grid Reliability/Stability Proposal  
Docket No. 2021-307-E**

**Response to Petition of Ananta Gopalan**

Dear Ms. Boyd:

Enclosed for filing on behalf of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (the "Companies") in the above-referenced docket, please find the Companies' Response to the Petition of Ananta Gopalan, along with a Certificate of Service for same.

By copy of this letter I am serving the parties of record, along with those parties who were served with a copy of the Commission's January 20, 2022 Notice.

Sincerely,

Camal O. Robinson

Enclosures

cc: Parties of Record  
Parties Served with January 20, 2022 Notice

**BEFORE**  
**THE PUBLIC SERVICE COMMISSION**  
**OF SOUTH CAROLINA**  
**DOCKET NO. 2021-307-E**

In the Matter of:	)	<b>DUKE ENERGY CAROLINAS,</b>
	)	<b>LLC’S AND DUKE ENERGY</b>
Petition to Review Grid Reliability/Stability	)	<b>PROGRESS, LLC’S RESPONSE</b>
Proposal	)	<b>TO PETITION OF ANANTA</b>
	)	<b>GOPALAN</b>

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Pursuant to Order No. 2022-35 and the Notice issued by the Clerk’s Office of the Public Service Commission of South Carolina (the “Commission”) on January 20, 2022, Duke Energy Progress, LLC (“DEP”) and Duke Energy Carolinas, LLC (“DEC” and together with DEP, the “Companies”) hereby file their response to the Petition filed by Ananta Gopalan in the above-referenced proceeding.

**BACKGROUND**

On September 21, 2021, Ananta Gopalan (“Petitioner”) filed a Petition with the Commission expressing concern with the reliability of the electric power grid due to the introduction of intermittent generation resources – such as solar or wind energy. The Petitioner also submitted a proposal for a “Solar and Wind Grid Isolation architecture” that will purportedly prevent customers with intermittent generation resources from exporting electricity to the grid, thereby preventing “reliability problems” from affecting the grid’s stability.

On January 13, 2022, the Commission issued Order No. 2022-35 instructing the Clerk’s Office to send notice of the Petition to the electric utilities and intervening parties in the current Integrated Resource Planning dockets and to provide the parties with thirty (30) days to respond to the concerns and proposals raised by the Petitioner.

On January 20, 2022, the Clerk's Office sent notice of the Petition to multiple parties, including the Companies, and instructed recipients to respond to the Petition within thirty (30) days pursuant to S.C. Code Ann. Regs. 103-826 and 103-830.

### **RESPONSE**

The Companies appreciate the Petitioner's interest in the topics outlined in the Petition and sincerely thank the customer for taking the time to express their concerns to the Commission and propose potential solutions for evaluation by the electrical utilities. The Petitioner has touched on a key aspect of the upcoming energy transition and the fact that utilities will need more visibility through technologies like automation, protection and control, and sensors to continue to effectively and reliably balance and operate the grid in an environment with an increased penetration of distributed energy resources ("DER"). The Companies work with industry trade groups like the North American Transmission Forum (NATF) and other organizations to evaluate various federal and state policies and establish best practices to ensure continued and future reliability and operability of the grid at all times, including during adverse weather events. As renewable resources continue to be added to the grid, policy conversations around operational challenges, changes in operational control with higher levels of purchased power, and regulatory recovery of transmission investments for support of renewables and reliability are regularly held. The Companies believe that clear, consistent, and coordinated policy approaches are critical as the grid continues to transform to support clean energy initiatives while simultaneously ensuring reliable and resilient operations.

The concerns expressed by the Petitioner and industry trade groups are the reason for the Companies' messaging across a variety of dockets before the Commission regarding the continued need for dispatchable, load-following resources to support intermittent generation resources as the

Companies' remaining coal generation units are eventually retired. Specifically, in the Companies' initial comments filed in Docket No. 2021-66-A, the Companies noted that:

With increasing amounts of solar and battery storage planned for the DEC and DEP systems, it will be vital for maintaining reliability, that DEC and DEP have sufficient firm, dispatchable resources with capability for sustained high capacity factors needed to ensure DEC and DEP are able to charge battery storage should customer demand be sustained at a high level for a multi-day period. Battery storage under fixed price PPAs may not be operated in manner that is most beneficial to ensuring reliability with meeting peak customer demands. If the battery storage is under system operator control, the system operator will optimize the charging and discharging cycles of battery storage to ensure reliable system operations.<sup>1</sup>

The Companies have also noted concerns with the impact that weather can have on intermittent generation resources like solar and wind. For example, the Companies have stated:

The Companies agree that demand response and distributed energy resources are integral components of a diverse and reliable system, and we should continue to advance those technologies, energy efficiency and supportive policies. However, these components in and of themselves cannot address large-scale resiliency issues for the core transmission and distribution system. These technologies may provide only limited resiliency during a widespread and multi-day weather event. Extended extreme cold is particularly challenging on customers, which limits broad demand response adoption, particularly as increasing percentages of heating in South Carolina is electric. The effectiveness of distributed generation or storage resources may also be hampered in multi-day events, depending on availability, such as limited on-site fuel storage, battery life of hours rather than days, and reduced or zero output from solar facilities during cloud cover or snow cover.<sup>2</sup>

As previously noted in other dockets, the Companies continue to support diversity of generation resources including customer-sited distributed energy resources that enable two-way power flow onto the grid. In fact, in 2021, the Companies explored program offerings that would incentivize customers to both adopt rooftop solar and enroll in a demand response program to optimize the utility system value of the customer bringing this type of DER to the grid. Although

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<sup>1</sup> Page 82, Duke Energy Carolinas and Duke Energy Progress Response to Commission Order No. 2021-163 dated March 10, 2021.

<sup>2</sup> Page 7, Duke Energy Carolinas, LLC and Duke Energy Progress, LLC Response to Comments Filed on June 11, 2021 per Commission Order No. 2021-163

the proposed program offerings were not approved by the Commission, the Companies continue to explore alternative program offerings that would optimize customer-sited DERs for maximum benefit to the system and to all customers on the grid. These types of programs will require Commission approval for implementation, and the Companies believe that they will help support the reliability of the grid during the clean energy transition.

Although the Companies understand the Petitioner's concerns regarding the increased level of distributed energy resources being added to the grid, the Companies are proactively taking steps to alleviate any negative impacts resulting from the transition to clean energy. The Companies continue to address the types of concerns raised by the Petitioner in their Grid Improvement Plan, which can be found in Docket No. 2019-381-E. The Grid Improvement Plan is a decade-long plan of near- and long-term actions and investments designed to transform the power grid, making strategic, data-driven improvements to power a smart-thinking grid that is more reliable, more resilient, and built to meet the energy needs of customers today and into the future. The Companies have held a number of stakeholder meetings during the execution of the Grid Improvement Plan and will continue to do so. Most recently, the Companies held virtual forums on October 26, 2021 and November 8, 2021.

On August 12, 2020, by Order 2020-533 in Docket No. 2019-381-E, the Commission approved the Companies' joint request to establish an informational docket for review and consideration of their Grid Improvement Plan. As a result of that order, on August 14, 2020, the Commission opened a consolidated informational docket for review and consideration of the Grid Improvement Plan in Docket No. ND-2020-28-E. Since then, the Companies have provided the Commission periodic updates related to their Grid Improvement Plan. Two of the concerns identified by the Companies in their Grid Improvement Plan that underly the need for investments

in the grid are decreased resiliency and reliability and the reduced ability to interconnect distributed energy resources, and the Companies have been implementing the grid improvement solutions to address these concerns.

Further, the Companies have been and will continue to make foundational investments in the grid – such as self-optimizing grid, integrated volt/var control (IVVC), distribution automation, power electronics for volt/var and integrated system operation planning (ISOP) toolsets – that will deliver both increased reliability and resiliency, as well as provide for the safe integration of customer-owned distributed energy resources. In addition to these examples, several grid connected battery storage projects are under consideration as well as foundational transmission investments in the grid such as system intelligence and hardening and resiliency projects and programs. The Companies continue to prepare the grid to support evolving integrated resource plans and future plans.

### **CONCLUSION**

The Companies appreciate the Petitioner bringing this important topic to the attention of the Commission. Although increasing levels of intermittent generation resources is certainly a challenge to maintaining a reliable and resilient power grid, the Companies have addressed and will continue to address this challenge through a variety of customer programs and investments to improve the grid.

Respectfully submitted this 18th day of February, 2022.

s/Camal O. Robinson  
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**BEFORE**  
**THE PUBLIC SERVICE COMMISSION**  
**OF SOUTH CAROLINA**  
**DOCKET NO. 2021-307-E**

In the Matter of: )

Petition to Review Grid Reliability/Stability )  
 Proposal )

**CERTIFICATE OF SERVICE**

The undersigned, Lyndsay McNeely, Paralegal for Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, does hereby certify that she has served the persons listed below with a copy of Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's Response to Petition of Ananta Gopalan in the above-captioned proceedings via electronic mail at the addresses listed below on February 18, 2022.

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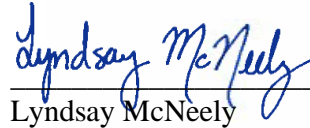
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Dated this 18th day of February, 2022.

  
Lyndsay McNeely